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**PROLIFERATION OF CHEMICAL WEAPONS AND BALLISTIC MISSILES:
RISKS TO NATO's SOUTHERN REGION**

BY

Lieutenant Colonel (P) James R. King, CM
Senior Service College Fellow
NATO Defense College

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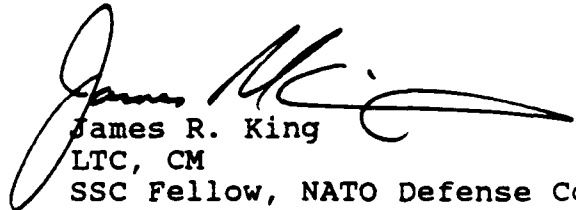
by

Colonel Richard W. Wall
Project Advisor

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James R. King
LTC, CM
SSC Fellow, NATO Defense College

ABSTRACT

AUTHOR: James R. King, LTC, USA

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INTRODUCTION

In the last few years the world has witnessed events of historic magnitude. President Gorbachev's policies of "glasnost" and "perestroika" have had global implications and have changed the strategic face of Europe. The Berlin Wall is down, Germany is unified, and there is little doubt that the World War II era of East-West confrontation has ended with the disintegration of the Warsaw Pact ¹ as a cohesive military, political, and economic alliance.

During 1990-91, Soviet political unrest and economic hardship coupled with Eastern Europe's political changes and pursuit of stable democratic governments virtually eliminated the historic threat of a large scale attack against Western Europe.² As a result, the North Atlantic Treaty Organization (NATO) has had to cope with new instabilities ranging from destabilizing developments in the Soviet Union and the Balkans to the dramatic emergence of crisis and war in the Gulf. The Alliance has been forced to adapt to the changing environment due to the move from a long-standing, easily defined bi-polar confrontation to a world with multi-polar risks.

As the Soviet threat faded, preparations for the Paris Summit and a Conventional Forces in Europe (CFE) Treaty were being finalized, and NATO allies sought the "peace dividend", Iraq's invasion and annexation of Kuwait brought the Western World's perspective into sharp focus on the Middle East (and NATO's focus on its Southern Region). Historically, tensions and conflicts in this area of the world have occurred between Israel and several Arab States, between the two Yemens, between Iran and Iraq, most recently between Iraq and the US led coalition forces, in addition to the continuing strife in Lebanon. This area is one of the most heavily armed regions of the world.³ The proliferation of even more sophisticated weaponry - including chemical, biological, and nuclear weapons - and of future ballistic missiles capable of carrying them represents a growing danger to international security.⁴ This proliferation of weaponry and long range delivery systems exacerbates regional tensions and certainly poses a danger to NATO countries and forces in the Southern Region.

This paper, after brief chapters covering a background of chemical weapons use and negotiations and a description of the region and its volatility, will examine the proliferation of chemical weapons in the Middle East and North Africa and the resultant future risks to NATO's Southern Region.

ASSUMPTIONS AND LIMITATIONS

First, this paper will focus on the proliferation of chemical weapons and their risk to NATO's Southern Region; it is not meant to address "out of area" aspects (ie, preparation

of NATO forces to fight in a chemical environment outside NATO boundaries). The study will primarily focus on ballistic missiles as the principle delivery means of chemical weapons (with some discussion on potential terrorists activity) in the context of risks to NATO's Southern Region.

Second, I assume that readers have basic knowledge of chemical agents/weapons, their effects, and of typical chemical defensive equipment. If readers in fact need information - for example, on what a nerve agent or mustard gas is or does to individuals, or on the difference between a persistent and a non-persistent chemical agent, or on the general capabilities of warning, detection, protective, or decontamination equipment - then they should seek general background information elsewhere. One readily available source is US Army Field Manual (FM 3-100), NBC Operations, the US Army Chemical Corps' "cornerstone" manual on chemical defensive operations.

Finally, it was fully my intent to write a classified paper at the NATO Secret-level. However, during my research it became readily apparent that there were essentially two categories of material available:

1. open-source literature and classified material releasable to NATO as one category, and
2. material classified as US SECRET - NOFORN (not releasable to foreign governments).

Since there was not a significant qualitative difference between open-source literature and NATO classified material, it was decided to keep the paper unclassified.

ENDNOTES

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2. Sam Nunn, "The Changed Threat Environment of the 1990's," Congressional Record-Senate, 29 March 1990, pp. S3444-S3445.
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CHAPTER I
A Brief History on Chemical Warfare:
Use and Negotiations

It is difficult to start a meaningful discussion on the proliferation of chemical weapons in the past years without first providing a brief history of the use of chemicals in conflict and a look at the international norms and laws that have been negotiated through the years in an attempt to achieve a global chemical weapons ban.

The earliest recorded use of chemical agents in war occurred in the fifth century B.C. during one of a series of wars between Athens and Sparta. Spartan forces placed a burning mixture of wood, pitch, and sulphur under the walls of the Athenian city hoping the fumes would incapacitate the Athenians making them unable to resist the assault that followed.¹ Although there are numerous other stories from history that describe rudimentary forms of chemical warfare, it is acknowledged that the first modern day use of lethal chemical warfare came during World War I on 22 April 1915 near Ypres, Belgium. In a well prepared, late afternoon attack,

the Germans opened the valves on more than 5000 cylinders of chlorine gas, sending a mile-long cloud toward French trenches. Two French divisions, the 87th Territorial and the 45th Algerian,² fled in panic opening a five-mile gap in Allied lines. Since the Germans had been skeptical of the effectiveness of the new gas weapon, they had not assembled a sufficient reserve force to exploit the breakthrough. The Allies reinforced and closed the gap during the night thus removing any chance for a dramatic tactical success by the Germans.³

The early military chemical agents used during World War I were nothing more than adaptations of common industrial products that produced deadly gases, such as, chlorine, phosgene, and mustard. However, these chemical gases had dramatic effects on unprepared, unprotected, untrained soldiers - an effect that has proven to be valid even to the most recent uses of chemical warfare today. Almost 100,000 were killed and over one million casualties were inflicted by the use of chemical gases during World War I.⁴

Since World War I, chemical weapons' use (and alleged use) is widely documented. While one must be aware that most chemical attacks have merely been reported or alleged by various means, evidence from a variety of sources⁵ strongly suggests that chemical weapons were used in various forms and in different ways in each of the below cited conflicts. Italy used mustard gas against Ethiopian troops in 1935-36. Japan, which was better prepared for chemical warfare and thus did not fear retaliation, used chemical weapons against Chinese

armies and civilians during the period 1939-44. During World War II, although both sides had significant stockpiles, mutual deterrence appears to have precluded employment (there was no confirmed use of chemical weapons during World War II; the noted exception being the use of poison gas by the Germans to kill hundreds of thousands in concentration camps). Egypt used chemical weapons in 1963-67 during its intervention in the Yemen civil war. During the Vietnam War, the US admits using riot-control agents and herbicides (agent orange) but denies any use of lethal chemical or biological weapons. In the late 1970's Vietnam is reported to have used chemical weapons in Laos and Cambodia (Kampuchea) against Hmong tribes and Kampuchean rebels. Ethiopian government forces are suspected of using chemical weapons during 1980-83 on Eritrean rebels with apparent Soviet indulgence and cooperation. Afghan resistance forces and the US charge that the Soviets used chemical weapons, experimental agents, and biological toxins from 1980-84 in Afghanistan. During the 1983-88 Iran-Iraq War poisonous gas was used against Iranian troops as early as 1983 with Iraqis employing mustard and possible blood and nerve gases. In 1987 Libya reportedly used chemical agents obtained from Iran against Chad. Iraq also used chemical weapons against the Kurds in northern Iraq in March 1988 resulting in tragic loss of civilian life. There is also evidence that Iran used chemical weapons during the 1983-88 war, but to a far lesser degree than Iraq.

This growing chemical warfare threat and use since World War I continues to reflect the long-standing (perceived)

realization that chemical weapons, under the right conditions, can be a highly effective addition to the tools of modern warfare.⁶ However, there has been no case of unrestrained use of chemical warfare by opposing modern forces. Current simulation models and studies (the US Army Chemical School's Combined Arms in a Nuclear/Chemical Environment, Force Development Testing and Experimentation (CANE FDTE) series of evaluation reports provide detailed results and analysis of the ability of a combined arms force to operate for sustained periods on the integrated battlefield) are needed to predict how a conflict with widespread chemical use would proceed and what results would be seen on today's fast moving, high technology battlefield.⁷

Chemical weapons do not easily fit the common definition of conventional weapons; and although they are capable of producing mass and indiscriminate casualties, they do not fit neatly into the same category with nuclear weapons. Militarily, if their use is not inhibited they could swing the balance in a conventional war or trigger the escalation of war to the nuclear threshold.⁸ Unlike conventional weapons which cause casualties by piercing or tearing apart the body, chemical agents react with human tissue changing it in a way that injures or kills.⁹ There are sufficient sources available that will expound on the horror of chemical warfare, the awesome and gruesome manner of death, and the moral issues to be dealt with concerning the use of chemical weapons/agents in war. However, some have the opinion that the use of chemical agents in war is no more immoral or inhumane than

numerous other weapons in the arsenals of modern warfare, such as, flechette artillery rounds or anti-personnel mines.¹⁰ In fact, it is actually war that is horrible and as Clausewitz reminds us:

"The fact that slaughter is a horrifying spectacle must make us take war more seriously, but not provide an excuse for gradually blunting our swords in the name of humanity. Sooner or later someone will come along with a sharp sword and hack off our arms." ¹¹

Chemical weapons and agents are, however, indiscriminate in the manner that they kill military and civilians alike. Once employed on the battlefield they are virtually uncontrollable and under the effects of weather and terrain. Downwind hazards carried by the wind can travel extremely long distances killing unwarned, unprotected, and innocent life of all forms.

For this reason, chemical warfare is seen by the civilized world as horrid and thus has been despised in all ages. In fact, chemical weapons/agents have long eluded the determined efforts of governments to ban, in one form or another, their production, stockpiling, and use through formally negotiated agreement. The first efforts to ban the use of chemicals in war go back to the 1874 Brussels Declaration which prohibited the use of poisons and poisoned bullets in war. Signatories to the 1899 Hague Conference agreed to abstain from the use of projectiles whose sole use was the diffusion of "asphyxiating and deleterious" gases.¹² Despite these efforts, chemical weapons were used extensively

during World War I. This use resulted in widespread public condemnation against the use of chemical weapons in war and led to post World War I actions and treaties such as the Treaty of Versailles and the Treaty of Berlin in the early 1920's (made it illegal for Germany to manufacture or import poisonous gases) and the 1922 Washington Conference (dealt with use of noxious gases in war but never came into force because France failed to ratify it).¹³ The cornerstone of international law prohibiting "the use in war of asphyxiating, poisonous or other gases, and of all analogous liquids, materials, or devices" as well as "the use of bacteriological methods of warfare" is the Geneva Protocol signed 17 June 1925.¹⁴ However, the recent violations of the Protocol and the growing interest in acquiring chemical weapons highlight its major shortcomings. The Protocol does not prohibit the development, production, stockpiling or deployment of chemical or biological weapons; nor does it provide for mechanisms or procedures for dealing with violations or sanctions to punish nations which use chemical weapons. Thus, in actuality the Protocol bans only first use.¹⁵ Chemical weapons continued to receive a high priority at the League of Nations International Disarmament Conference in 1932-33 and attention from the United Nations from 1948 onward.

Since the decision to conclude a separate treaty on biological weapons (The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin-Weapons and on Their Destruction) was opened for signature/signed 10 April 1972 the Conference on

Disarmament (CD) meeting in Geneva has been working towards a similar treaty on chemical weapons.¹⁶ The US and Soviets began bilateral discussions on banning chemical weapons in 1977; but talks stalled in 1979-80 over verification issues and subsequently broke off. Since 1980, multilateral negotiations between 40 countries (there are currently only 39 countries as a result of German unification) have gone on in Geneva. Basic agreement has been reached on the "goal" of a complete ban on the development, production, acquisition, possession, transfer or use of chemical weapons. In 1983 the Soviets' flexibility on certain verification issues allowed major progress and was followed in 1984 by, then Vice President, Bush's tabling of a draft treaty on chemical weapons and simultaneously calling for a resumption of bilateral talks. At the 1985 Geneva Summit, Presidents Bush and Gorbachev affirmed their joint commitment to accelerate negotiations leading to a total chemical weapons ban.¹⁷ A draft "rolling text" has been developed at the Conference on Disarmament leaving brackets and gaps where there is disagreement or sections needing further work or negotiation.¹⁸

The Conference of States/Parties to the 1925 Geneva Protocol and Other Interested States on the Prohibition of Chemical Weapons was held in Paris, 7-11 January 1989, and attended by 149 States. It addressed the serious erosion of respect for international norms against the use and dangerous proliferation of chemical weapons and called on the Conference on Disarmament to intensify negotiations on a comprehensive

chemical weapons ban.¹⁹ The Paris Conference on chemical weapons is credited with forging a powerful global consensus against use and proliferation of chemical weapons and has given significant political impetus to the Geneva negotiations on a convention to ban chemical weapons entirely.²⁰

Notable progress was again made at the 1 June 1990 Washington Summit where Presidents Bush and Gorbachev signed an agreement calling for the destruction of most US and Soviet chemical weapons by the year 2002. Destruction is to begin by the end of 1992 with most of the stocks to be destroyed by 1999.²¹

The negotiations at the Conference on Disarmament have made significant progress in the past ten years, but many issues remain unresolved. The current key issues for negotiation are "challenge inspection" and whether there will be a provision for nations to retain some chemical weapons until late in the convention without making a decision to ultimately go to zero (commonly referred to as the "two percent problem" or the "98 percent solution").²²

The underlying issues for challenge inspections will not be easy to resolve. The broad spectrum of chemicals and the nature of the international chemical industry offers significant roadblocks. The chemicals and equipment required to produce chemical agents have legitimate applications and have become more available as the petro-chemical, fertilizer, pesticide, and pharmaceutical industries have expanded.²³

President Bush, in the hope of accelerating the Geneva negotiations, announced on 13 May 1991 that the US would

forswear the use of chemical weapons for any reason, including retaliation, if an international agreement to ban chemical weapons can be reached. He further committed the US to destroy its entire stockpile of existing chemical weapons within ten years, once an international agreement for eliminating chemical weapons takes effect, thus dropping the position to retain two percent of its stockpile until all chemical weapons' capable countries have signed the treaty.²⁴

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4. Frederick J. Kroesen, GEN (Ret), Chemical Warfare - A Real and Growing Threat, p. 9.
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8. Stoessel, p. 2.
9. Ibid., p. 5.
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22. Christine M. Helms, Matthew Meselson, and Brad Roberts, Chemical Weapons and Security in the Middle East, p. 17 and p. 29.
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CHAPTER II

The Region and Its Volatility

For this paper, the term "Middle East" will be used to include Egypt, (grouped and discussed here primarily for historical and political reasons), Iran, Iraq, Israel, Jordan, Lebanon, Syria, Saudi Arabia, Kuwait, and other sheikhdoms of the Arabian heartland. The term "North Africa" will be used to include the countries of Morocco, Algeria, Tunisia, Libya, (and Egypt) that border the Mediterranean and also Western Sahara and Sudan.¹

Since the boundaries for NATO were first drawn and stated in the North Atlantic Treaty,² issues or conflicts from outside these boundaries have historically been viewed and treated as "out-of-area" issues. Thus, they have always caused (or perceived to have caused) problems in the discussion of global challenges and in most cases often blocked common Alliance action. Still, the Alliance has shown concern with "out-of-area" security challenges and has expressed so in virtually all North Atlantic Council communiques. The most quoted reference on the "out-of-area" subject comes from paragraph 15 of the Harmel Report, issued in December 1967, which states:

"The North Atlantic Treaty cannot be treated in isolation from the rest of the world. Crisis and conflicts arising outside the area may impair its security either directly or by affecting the global balance . . ." ³

Today, when one looks outside Alliance boundaries numerous risks to security, depending on focus, can be seen coming from many directions. However, the recent Gulf War has riveted global focus on the Middle East region; and there is sufficient justification to indicate that high risks and future potential crisis and flash points for NATO are in its Southern Region. Issues in this region of the world, traditionally discussed as "out-of-area", by a matter of perspective, are viewed entirely as "in-area" for the Southern Region.

The media blitz and volume of written material as a result of the recent Gulf War has clearly highlighted the inherent regional instability, as well as, its strategic vital importance to Western countries. Admiral Antonio Geraci, Commander of Allied Naval Forces Southern Europe recently stated:

"The Mediterranean is the melting pot of the interests of all Western nations, and the security of all of Europe passes through these waters. Unfortunately, this simple and well-provided historical fact has not easily been recognized in the past, and NATO has always dedicated more attention to the Central Region and to a classic scenario of a major confrontation with the East Block." ⁴

It is clear to most that the past attention and priority

to the classic threat from the East focused against NATO's Central Region was well founded; the corresponding (perceived) neglect or lack of attention to risks or threats from the flanks has been unfortunate.

Now, however, the vast human suffering of ethnic groups and the poor, the struggling economic order and uncertain political systems, the proliferation of weaponry in the region, and the lack of political and security structures and mechanisms for the Middle East and North African regions have placed Western countries face-to-face with a tremendous challenge.⁵ A key question that now must be addressed by the NATO Alliance is: Was NATO originated solely to counter the Soviet threat to Central Europe? If not, then NATO must now address itself to the growing risks to its Southern Region which originate from the Middle East and North Africa.

This entire region has historical, as well as, strategic importance to the West. It is the connecting point of three continents (Africa, Asia, and Europe) and the ethical and religious center of the world being the birthplace of three major religions (Judaism, Christianity, and Islam). Few will argue that its critical importance also derives from its position controlling some of the world's critical sea lines of communication (SLOCs), as well as, being the energy (oil) resource center of the world. Certainly, Turkey's common border to the region ensures that the Middle East is inseparable from Europe and, likewise NATO. The geo-strategic importance of the Mediterranean SLOCs as a major access route to the Middle East energy (oil) resources makes North Africa

also of vital interest and importance, specifically to NATO's Southern Region.⁶

The Middle East and North Africa will undoubtedly remain an area of serious unrest; the entire region is a highly armed camp. Lethal technologies have frequently been sold by Western countries indiscriminately and profitably throughout the region. The result is an arsenal of destructiveness that gives regional leaders the potential muscle to commit aggression. Egypt, Iran, Iraq, Kuwait, Syria, and Saudi Arabia have purchased from abroad over 125 billion dollars in arms since 1983. When you add the further sales to Libya, Algeria, and Morocco this accounts for more than one-half of the worldwide arms trade to this region of the world.⁷ Further escalation of the regional arms race is now even more likely due to the pending "shopping spree" for arms, especially the high technology weapons that were seen to be highly successful in the recent Gulf War.⁸

Today, all Middle East countries (except Israel) face tremendous cultural, social, economic, and political tensions that accompany the process of belated modernization. There are two historical conflicts that overshadow the region and warrant brief discussion. First is the Arab/Israeli conflict which dates to the beginning of this century with the simultaneous emergence of Jewish and Arab/Palestinian nationalism. The conflict was confined to Palestine until World War II, and even during the 1948, 1956, and 1967 wars the main conflict was between the newly formed state of Israel and Arab states. It was not until after the 1967 war that the

Palestinian issue re-emerged. Since, the conflict has continued in the form of either Palestinian verses Israeli or Arab States verses Israel. This enduring conflict can be further traced through the 1973 war with Egypt and Syria against Israel, the 1975 Lebanon crisis, and the recent Palestinian Intifada (uprising) in the Israeli occupied West Bank and Gaza Strip.⁹ The Arab/Israeli conflict and the Palestinian question are seen by many as the root of all regional problems. Many Arab leaders are adamant that nothing can change in the Middle East and no peace process will begin until Israel is willing to negotiate in earnest.¹⁰ Second is the inter-Arab conflict which is seen as the competition between Egypt, Iraq, Iran, Syria, and Saudi Arabia for regional dominance and Arab leadership in the Middle East. By stressing "Arabism" or "Islam", leaders of rival regimes attempt to influence the Arab and Muslim populations directly.¹¹ In the Middle East region the unequal distribution of wealth, with vast contradictions between rich and poor, the result has widely been only questions to the causes of "pan-Arab" and "pan-Islamic" unity and brotherhood. Arab countries continue to consider themselves victims of a world order that favors the industrialized countries of Europe and North America (specifically the US) both economically and politically. They see any effort by Western countries to maintain order, peace, or status quo in the region as aggression against Arab nations.¹²

When you combine the historical significance of these two conflicts with other contributory factors of instability, such

as, growing ethnic and minority problems, the imbalance between population and economic growth, scarcity of water and arable land, the spread of Islamic fundamentalism, widespread migration of peoples, and the proliferation of armaments the Middle East becomes highly volatile and makes the post-Gulf War regional order a significant challenge.¹³

Although not traditionally viewed as a serious risk to NATOs security, the North African region is, likewise, an unstable area bearing careful consideration. North Africa, with its affinity to the Middle East culturally, politically, and religiously is clearly in the sphere of influence of NATOs Southern Region. It is, in many ways, inter-linked with the Middle East sharing historical ties and important characteristics such as, the Arabic language and an overwhelming acceptance of Islam.¹⁴ The North African region is troubled by famine, soaring birth rates, and unemployment. Changing regional circumstances resulting from the threat of political turmoil, the potential collapse of secular Arab governments, and an increase of Islamic fundamentalist movements and regimes in Morocco, Algeria, and Tunisia have resulted in political instability across North Africa.¹⁵ Islam's appeal in the region has grown because of economic hardship, political failure, and social turmoil. Muslim demands for change are no different than the demands in Eastern Europe for jobs, housing, and funds to address economic problems. Islamic fundamentalism will continue to make headway in the region as a result of deep frustration and anger.¹⁶ The Palestine Liberation Organization (PLO) has long

been active in Tunisia and Libya which is another reason for concern; and although their thrust has historically been aimed at Israel, they could further expand their power base and influence in the region thus aggravating regional instability. Terrorism, with its high media profile, is also rapidly becoming a weapon of choice in the region. Algeria has long been a training base for terrorists and Libya is well documented as an overt sponsor of State terrorism.¹⁷

From North Africa, the expansion of Islamic fundamentalism, PLO presence in the area, exportable terrorism, and proliferation of weaponry (specifically Libya's increased chemical weapons capability and Qadhafi's demonstrated aggressive nature) makes the view across the Mediterranean unsettling.

In summary, the main causes of instability in the Middle East and North African region are a result of explosive population growth, economic disaster, water shortage, and political turmoil. When you add the Arab/Israeli animosities and the spread of Islamic fundamentalism to this instability, the region becomes volatile. Thus, the heightened concern over the proliferation of weaponry in the region, specifically chemical weapons and their future ballistic missile delivery systems.

ENDNOTES

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CHAPTER III

Proliferation of Chemical Weapons and Ballistic Missiles

The past years have seen the repeated use of chemical weapons in defiance of one of the oldest norms of international law (the 1925 Geneva Protocol). When you couple this growing proliferation and use of chemical weapons with the spread of dangerous and destabilizing high technology weaponry that is available in increasingly alarming quantities in the international marketplace, specifically ballistic missile technologies, one realizes the grave risks to regional, as well as global, security.

President Bush in his 2 August 1990 address to the Aspen Institute ¹ Symposium stated:

"In spite of our best efforts to control the spread of chemical and nuclear weapons and ballistic missile technologies, more nations are acquiring weapons of mass destruction - and the means to deliver them", and continued, "In the future, even conflicts we once thought of as limited or local may carry far-reaching consequences".²

Further, the North Atlantic Council in their December 1990 Ministerial Communique stated that we must meet new challenges:

"The proliferation of weapons of mass destruction and the spread of destabilizing military technology have implications for Allies' security and illustrate that in an evermore interdependent world, we face new security risks and challenges of a global nature".³

Today there is no question that the NATO Alliance is in a new era and adapting to many new circumstances and challenges. However, during this critical period it is too simplistic to claim that the Soviet military power is no longer relevant to Western security planning. Despite their internal problems, the Soviet Union is modernizing their forces and remains Europe's most powerful nation ⁴, the only country with the capability to project their military force to directly threaten NATO boundaries. Still, most recognize that this classic threat to Alliance security is fading; and during this period of East/West arms reductions it is evermore important to be alert to challenges and risks from other corners or from outside Alliance territory that could threaten its boundaries. The recent Gulf War is illustrative of this point; and with the trend towards disarmament and lower defense budgets in the Western World, the importance of many of the Third World's new high technology weapons' arsenals acquires a global dimension. New high technology weapons and delivery systems could be used to directly threaten Alliance territory or to exercise leverage over its affairs.⁵ These current growing risks are

recognizable all along the periphery of NATO's Southern Region, from the Maghreb to the Middle East. The growing proliferation of chemical weapons and ballistic missile technologies is exacerbated by tensions in this region ranging from growing ethnic unrest, religious fundamentalism, explosive population growth and migration, and continuing resource conflicts which thus magnifies the current interest in this region.

Proliferation of Chemical Weapons

The proliferation of chemical weapons is a disturbing development and the attractiveness of their use for the Third World countries is significant. Several countries, especially in the Middle East and North Africa, possess a chemical weapons' capability and a growing number appear to be seeking the capability to develop and employ these weapons. In seeking a chemical weapons' capability countries may not necessarily be planning to wage chemical warfare, but merely to deter use by others. However, the capability certainly enables political leaders and their military to consider chemical warfare as a strategic or tactical option.⁶ Chemical weapons have always promised a devastating effect, especially against an unwarned and unprotected enemy, at little cost. Non-nuclear countries often view the acquisition and means of delivery of chemical weapons as a way to counter the nuclear capability or superior military strength of more powerful foes⁷ (witness several Arab states' argument for possession of their chemical capability to counter Israel's nuclear capability). Chemical weapons are also often viewed as a cheap alternative

to nuclear weapons or as a temporary half-way house in the development of a nuclear weapons' capability ⁸ - often referred to as a "poor man's nuclear bomb".

Acquiring a chemical weapons' capability is certainly not a difficult task. In most cases the precursor chemicals and equipment required to produce chemical agents are inexpensive, available through legitimate industrial channels, or readily available on the open market. For example, thiodiglycol, an immediate precursor to mustard gas, is used in photographic developing solutions, plastics, and ball-point pen ink. Phosgene, a chemical agent itself known as choking gas, is commercially used in the production of dyes, plastics, and as an intermediate agent in the synthesis of pharmaceuticals, pesticides, and insecticides.⁹ Phosphorous Oxychloride, used in the production of insecticides, is the key precursor chemical needed in the production of tabun, a nerve agent which is often thought to be most attractive to terrorists because of its great lethality, availability of required precursor chemicals, and relative simplicity to make.¹⁰

In fact, the widespread availability of dual-use chemicals has facilitated the proliferation of chemical weapons and significantly increased the difficulty of controlling them. Similarly, required production equipment can also be easily purchased. Much of today's commercial chemical production and processing equipment, such as, common laboratory equipment or most any petro-chemical or pharmaceutical production line, can easily be used to produce chemical agents.

<u>Dual-Use Chemical</u>	<u>Commercial Product</u>	<u>Chemical Agent</u>
Thiodiglycol	Plastics	Mustard Gas
Phosphorus		
Oxychloride	Insecticides	Nerve Agent
Dimethyl		
Methylphosphonate	Fire Retardant	Nerve Agent
Thionyl Chloride	Pesticides	Mustard Gas
Dimethylamine	Detergents	Nerve Agent
Tris-Ethanolamine	Cosmetics	Mustard Gas
Dimethylamine		
Hydrochloride	Pharmaceuticals	Nerve Agent
Potassium Bifluoride	Ceramics	Nerve Agent
Sodium Cyanide	Dyes & Pigments	Nerve Agent
Diethyl Phosphite	Paint Solvent	Nerve Agent
Sodium Sulphide	Paper	Mustard Gas

Figure 1. Dual-Use Chemicals:
Precursors for Both Commercial Products and Chemical Agents¹¹

Should countries wish to conceal their chemical weapons' intentions, they can use cover organizations and ship required precursor chemicals and equipment through intermediary or third parties to disguise their ultimate destinations - as has been demonstrated by Iraq and Libya.¹² The actual production of lethal chemical agents is, likewise, not particularly complicated. Procedures are openly described in chemical literature as a consequence of the growth of petro-chemical, fertilizer, pesticide, and pharmaceutical industries; thus, required industrial production techniques are widely dispersed. Today, any country that can produce organophosphorus pesticides possesses the technology and expertise to manufacture nerve agents.¹³ The production or acquisition of appropriate delivery systems is, however, more difficult but certainly not insurmountable.

What is available in the open-source literature about proliferation of chemical weapons, even without reference to

classified sources, is certainly alarming. Twenty years ago, it is suggested that only about five countries possessed chemical weapons. Today, numerous open-source literature indicates that the number has grown to greater than twenty with still other countries actively seeking to acquire a chemical weapons' capability.

<u>Positive or Strong Probability</u>	<u>Suspected</u>	<u>Other Countries</u> ¹⁴
United States	South Africa	Argentina
Soviet Union	South Korea	Brazil
France	Thailand	India
Iraq	Pakistan	Peru
Iran	Chile	Saudi Arabia
Israel	Cuba	
Egypt	Somalia	
Syria		
Libya		
Burma		
Ethiopia		
China		
North Korea		
Vietnam		
Taiwan		
Afghanistan		

Figure 2. CHEMICAL WEAPONS' CAPABLE COUNTRIES
(compiled from multiple sources) ¹⁵

However, as in any study of public information there is obviously a great opportunity for disinformation, as well as, conflicting and confusing estimates of countries possessing a chemical weapons' capability. There are a variety of purposes that may be served by propagating such reports of chemical weapons' proliferation (accurate or not) if nothing else than to highlight one's adversary as an horrific villain in the eyes of the civilized world. The risk of misinformation is also high for nuances, qualifications, reservations, and the

too often quoted responsible governmental official speaking "off-the-record". Even US intelligence and diplomatic agencies (Naval Intelligence, Central Intelligence Agency, Defense Intelligence Agency, and the Commerce Department) are often at odds on exactly who has chemical arms.¹⁶ Therefore, to be skeptical about chemical weapons' proliferation reports is sometimes wise, but certainly not to deny that they may be true. In reality, the ease with which chemical agents can be manufactured in industrial plants involved in pesticide or other petro-chemical industrial production makes any list of possessor countries almost irrelevant. Many share the opinion that any country determined to acquire a chemical weapons' capability can certainly obtain the means to do so.¹⁷

Regardless of the source, it is recognized that the Middle East and North African region has the highest concentration of chemical weapons' capable countries in the world: Egypt, Israel, Syria, Iran, Libya, and Iraq. Proliferation of chemical weapons in the region gathered pace beginning in the early 1970s as countries were forced to consider developing a chemical weapons' capability in order to protect themselves.¹⁸ Egypt's possession of a chemical weapons' capability and use during its involvement in the Yemen Civil War during 1963-67, and the fear that they would resort to chemical weapons use during the 1967 Egyptian/Israeli War, caused Israel widespread apprehension. The transfer of chemical weapons from Egypt to Syria before the 1973 War followed by the capture of Egyptian chemical defensive equipment during the war furthered Israeli concerns.

These events are viewed as the likely reasons for Israel's development of a chemical weapons' capability which is thought to consist of mustard and nerve agents.¹⁹ However, it was Iraq's use of chemical weapons in its war with Iran that clearly made Israel aware of the dangers of chemical warfare in the Middle East.²⁰ Syria initially sought to acquire a chemical weapons' capability in the early 1970s, mainly to counter the superior military threat from Israel, and they first obtained chemical weapons from Egypt in 1973. French, German, and Swiss companies have all been active in helping Syria develop its chemical weapons' research and production capability which is currently thought to include mustard and nerve agents.²¹ Iran began to develop a chemical weapons' capability in response to Iraqi chemical attacks during the 1980s Gulf War with their first chemical weapons being supplied by Syria. It is now reported that Iran is producing mustard, blood, and nerve agents with the required foreign assistance primarily coming from German companies.²² Libya began seeking a chemical weapons' capability in the mid-1980s primarily as a means to counter Egypt's conventional military superiority and chemical weapons' capability, to prevent repetition of previous humiliations by the US, and to maintain military morale as a result of recent defeats in Chad. Qadhafi also sees chemical weapons as a means to make threatening political and military gestures or terrorists' acts throughout the region.²³ Libya is currently thought to be capable of producing mustard and nerve gas which was made possible by assistance primarily from German companies (and

also with Japanese assistance).²⁴ Iraq's effort to obtain a chemical weapons' capability began in the early 1970s as a means to deter the perceived Israeli nuclear threat, to counter Iran's conventional military superiority, and for use controlling Kurdish opposition groups. Iraq built up a significant chemical weapons' capability consisting of choking, blister, blood, and nerve agents during the 1980s²⁵ largely attributable to German assistance.²⁶ Prior to the recent Gulf War, Iraq is viewed to have had the most effective offensive chemical weapons' capability in the Middle East and North African region.²⁷ In fact, Iraq's experience from 1983-1988 during their war with Iran demonstrated to other countries of the region that chemical weapons have significant military utility and can compensate for inferior numbers (chemical weapons were primarily used to halt Iranian human wave attacks),²⁸ that treaties don't prevent chemical weapons use,²⁹ and that the superpowers and world community are unable or unwilling to stop transfer and proliferation of technical assistance, which countries in this region need to develop their chemical weapons' capabilities.³⁰ Also, the lack of international criticism of Iraq, the main culprit of recent chemical weapons' use, has been noted by all countries; and since the world perception is that they gained a significant military advantage by using chemical weapons (this is not to state that chemical weapons were decisive in the outcome of the Iran/Iraq War or in any critical battle since there is much controversy on this particular subject³¹), it can be expected that many more countries are now thinking about

acquiring chemical weapons for their arsenals.³² Thus, proliferation breeds proliferation.

The Growing Terrorist Threat

The ease with which chemical agents and simple delivery means can be obtained or produced, the relative small quantities required to produce significant results coupled with the potential horrifying effect of their use, and the vulnerability of political, military, and civilian targets make chemical weapons highly attractive to terrorists.³³ There has been an extreme reluctance to even talk about terrorists' access to weapons of mass destruction (nuclear, chemical, or biological); but George Shultz, then US Secretary of State, in his 7 January 1987 speech to the International Chemical Disarmament Conference in Paris warned:

"Terrorists' access to chemical weapons is a growing threat . . . There are no unsurmountable technical obstacles that would prevent terrorist groups from using chemical weapons".³⁴

This warning was directed at Libya's production of chemical weapons and their state sponsorship of terrorists' activities. There is every reason to suspect that terrorists will acquire chemical weapons in the near term, because it is relatively easy to find out from open-source literature how to make chemical agents, obtain the precursor chemicals required to do so, and then to prepare and deliver the agent.³⁵ Thus far terrorists have avoided chemical weapons, but it may merely be a matter of time. The vulnerability presented by military installation guards and other sensitive facilities

make them lucrative targets ripe for exploitation - military police, local police, and contract guards are all provided with firearms and often bullet-proof vests, but rarely chemical protective equipment or training. Chemical weapons offer terrorists an attractive alternative to defeat such physical security barriers now being used. A great majority of such targets, both military and civilian, are ill-prepared psychologically or physically for such an attack.

Intelligence is lacking, warning is unlikely, and current resources to cope with potential casualties are ill-prepared and inadequate. International terrorist groups, with their state-supported infrastructure, have access to the resources to wage chemical terrorism.³⁶ If we think otherwise, then our vulnerability and naiveness in this crucial area are clearly showing.

Counter-Proliferation Measures

The principle means for slowing chemical weapons proliferation is in strengthening of the existing arms control regime through the achievement of a comprehensive global chemical weapons ban, one with meaningful compliance provisions and verification measures. Other measures can be seen in the form of special export controls, clearly a national responsibility,³⁷ which have been adopted by many states. The most notable group of states to take action is known as the "Australian Group". It has grown out of related export controls which various Western governments began to impose upon their chemical industries in the spring of 1984 in response to the means by which the Iraqi chemical weapons

program was developed. The Group is comprised of the European Community states plus Canada, Japan, New Zealand, Norway, Switzerland, the US, and Australia (in whose Paris embassy the Group meets thus providing its name).³⁸ The Group has agreed to a list of chemicals requiring a formal export license and also to a longer list of chemicals and precursor chemicals which comprise the Group's Warning List. It is used by chemical industries to enable them, on a voluntary basis, to inform government agencies of approaches made for the supply of chemicals on the subject warning list. Although these and other measures are having some effect, it appears that it is more likely due to a combination of commercial and governmental pressures upon individual corporations rather than to any direct discouragement of potential proliferative states. With few exceptions, the effectiveness of current counter-proliferation measures will probably not be long-lived since the technologies which these countries are seeking are now too widely spread and too easily accessible by alternate routes, for any export controls to be unsurmountable. It appears that most current counter-proliferation measures offer little more than an increase in the costs of acquiring a chemical weapons' capability.³⁹

Ballistic Missile Proliferation

Along with the dangerous proliferation of chemical weapons, another disturbing development is the proliferation of delivery systems, specifically ballistic missiles. The Soviet Union has been extremely successful over the past years in exporting their ballistic missiles; and short and medium-

range missiles are also now being developed and produced by many Third World countries. The key question concerning ballistic missile proliferation is why a country would opt to develop and/or acquire missiles when the option of delivering destructive ordnance by aircraft already exists.

The dangers of ballistic missiles derive from their capabilities which add important new dimensions to the threat. Most tangibly, launch sites are mobile (as opposed to fixed air bases), they can attack distant targets with speed that in many cases preclude warning, they are difficult to destroy in flight, they can carry a variety of destructive munitions, and they have an almost assured ability to penetrate into enemy territory.⁴⁰ (While there may be a perception, as a result of the recent Gulf War, that the US Patriot Missile system makes the threat from ballistic missiles obsolete; the facts are that it is an extremely expensive system, it is incapable of being fielded to all locations at high risk of ballistic missile attack, and there is recent conjecture that in some cases it was hitting the missile but not actually destroying the warhead which continued to fall to the target vicinity.⁴¹) By comparison, aircraft can take hours to prepare and require significant flight times to reach targets - activities that can be observed and provide prior warning to countries with capable intelligence systems. Therefore, the obvious military advantage is that missiles can rapidly strike targets that would not be possible with combat aircraft.⁴²

The recent pattern of ballistic missile proliferation makes the world security environment more volatile and

dangerous; and is already fueling regional arms races and destabilizing the balance of power.⁴³ The primary means by which countries are acquiring ballistic missiles remains the traditional channels of North-South arms trade, military assistance, and technology transfer. Today the missile forces of Iraq, Syria, Egypt, Iran, Yemen, and Libya all feature original or modified versions of the Soviet SCUD-B missile. All of these countries also possess the Soviet manufactured, shorter-range FROG-7 missile or its replacement, the more accurate SS-21 SCARAB missile.⁴⁴ Some regional countries have also obtained Soviet design missiles through an intermediary such as North Korea (it is alleged that North Korea recently delivered modified SCUD missiles to Syria as reported on the 12 March 1991 CNN International Headline News). China appears to be the world's newest supplier of ballistic missiles having recently sold their CSS-2 ballistic missile to Saudi Arabia.⁴⁵

Ballistic missile trends, capabilities, and emerging capabilities are a sensitive subject since most countries in the region desire to keep their current missile capabilities and developments removed from public scrutiny.⁴⁶ The result is that descriptions within open-source literature can vary greatly and may be misleading. Nonetheless, the proliferation of ballistic missile systems is a truly global phenomenon with sixteen to seventeen Third World countries in possession or in the process of developing or procuring ballistic missiles. The most concentrated area of proliferation is not surprisingly located in the Middle East and North African region where eleven ballistic missile possessor countries are

located.⁴⁷

<u>Long-Range</u> (>900 KM)	<u>Medium-Range</u> (200-900 KM)	<u>Short-Range</u> (< 200 KM)
Saudi Arabia	Egypt	North Yemen
Israel	Iran	Kuwait
Iraq	Syria	Algeria
	Libya	
	South Yemen	

Figure 3. Ballistic Missile Capable Countries
In The Middle East and North Africa
(compiled from multiple sources)⁴⁸

Certainly the technology, ranges, accuracies, and numbers of missiles currently in the possession of regional countries varies extensively; and, even to some extent, may not currently be viewed as a serious risk. More striking than existing ballistic missile arsenals are the trends in missile development and the pace at which arsenals may increase in the near-term. Many new missiles are under development in different parts of the world and numerous regional countries have put significant resources into missile development, both internally and in cooperative ventures with other countries such as Brazil and Argentina. Others are exchanging technology rather than participating in joint development projects.⁴⁹ The proliferation of ballistic missiles in the Middle East and North Africa is a growing risk that clearly affects the security of NATO's Southern Region since Southern Europe can currently be attacked by missiles launched from Iraq, Israel, and Saudi Arabia (also Libya's missile development projects should result in the 1000 km range MB/EE missile in the near to mid-term ⁵⁰). While it can be argued

that regional countries have long possessed the ability to do so with modern aircraft, the difference now lies in the assured penetration of air defense systems which ballistic missiles (in essence) provide.⁵¹ Thus, we must not be complacent about the growing ballistic missile threat.

Counter-Proliferation Measures

Attempts have been made to prevent the proliferation of missile technologies. On 16 April 1987, the governments of the US, Canada, Germany, France, Italy, Japan, and the UK simultaneously announced their adoption of a common policy aimed at limiting the proliferation of missiles - the Missile Technology Control Regime (MTCR). They agreed not to sell complete rocket systems, subsystems, production equipment and facilities, or design and production technology that could be used to create an unmanned delivery system, both cruise missiles and ballistic missiles, with a payload capability greater than five hundred kilograms and a range greater than three hundred kilometers.⁵² Clearly, the MTCR has succeeded in creating an awareness of the missile proliferation problem among Western suppliers and has provided a structure for export controls; but recent missile development trends suggest that it has been incapable of dealing with the scope and intensity of ballistic missile proliferation in the Middle East and North African region. The Soviet Union,⁵³ China, North Korea, Brazil, and Argentina are not signatories to the agreement, nor are any of the regional countries themselves. Even signatories, such as Germany, have had difficulty controlling their domestic companies that are interested in

supplying relevant technology to countries within the region and elsewhere.⁵⁴ Obviously, the MTCR is a valuable tool in slowing missile proliferation, but it is incapable of stopping it . . . the MTCR is too little, too late. Countries most interested in acquiring and developing ballistic missiles are busy building and modifying missiles based on the technology already widely available.⁵⁵

ENDNOTES

1. The Aspen Institute (formal name: Aspen Institute for Humanistic Studies) is an international organization founded in 1949. Its aims are to integrate humanistic values into the choices which must be made in selected areas of contemporary life and to bring able people from all sectors of society together in a search for viable approaches to many of the most critical issues of our time.
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33. Summary Report: Chemical Warfare in the Third World, p. 2-7.
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47. Ibid.

48. Ibid., pp. 7-9; "Ballistic Missile Proliferation in the Developing World," p. 18; Barnaby, pp. 2-3; Rubenson and Slomovic, pp. 4-7; Pelletiere, Johnson, and Rosenberger, p. 45; Potter and Stulberg, p. 544.
49. Rubenson and Slomovic, p. 8.
50. Ibid. p. 13.
51. Navias, p. 44.
52. Frederick J. Hollinger, "The Missile Technology Control Regime: A Major New Arms Control Achievement," World Military Expenditures and Arms Transfers 1987, p. 25.
53. Although the Soviet Union is not a signatory to the MTCR their recent statements on missile proliferation increasingly resemble those of the US, except when the subject concerns Israel. In fact, the Soviets and the US signed a joint statement 10 February 1990 in which both agreed to adhere to the export guidelines of the MTCR. (See Potter and Stulberg, pp. 551-553.)
54. Navias, pp. 26-27.
55. Rubenson and Slomovic, p. 9.

CHAPTER IV Future Risks

Probably the greatest future risk of crisis or conflict for NATO's Southern Region lies in an overspill of unpredictable regional violence, most likely opposite a common border, as a result of regional instability or conflicting security interests. Continued widespread economic problems could result in uncontrolled migration of people, mass movement of refugees as a result of the recent Gulf War is already a serious concern, and growing ethnic and religious aspirations have long been concerns that could further destabilize the security of the Middle East and North African region.¹ The implications that continued proliferation of chemical weapons and ballistic missile technologies bring to this already volatile and unstable region are, therefore, disturbing.

It is widely acknowledged that during the past decade several new countries have acquired chemical munitions and ballistic missile delivery systems of various ranges. It is also acknowledged that the major growth of this risk is no

where more evident than in the Middle East and North African region. Within this region current chemical warfare capabilities are varied and current ballistic missile arsenals largely consist of inaccurate, short or medium range missiles.² However, the growing capacity for development, production, and advancement in technology is of significant concern and poses grave risks.

Smaller countries perceive a gain in power and overproportionate regional leverage through the acquisition of dangerous arms,³ such as chemical weapons. However, the risk from the proliferation of chemical weapons comes from the capability to carry out the threat of their use or to deliver them on a target. While many countries could probably endure conventional ballistic missile attacks (witness Israel during the recent Gulf War), ballistic missiles tipped with chemical warheads is an entirely different situation. Chemical weapons create a tremendous psychological effect, one with an extremely high value as a weapon of mass terror which few countries would tolerate without some form of reprisal. Thus, a major risk from the proliferation of chemical weapons can be characterized as the strategic marriage of a chemical weapons capability with a ballistic missile capability.⁴

It is not difficult to correlate the countries in the region who have both capabilities and are striving to acquire the technology to mate the two; or have one of the capabilities and are actively seeking the other.

<u>Country</u>	<u>Missiles Deployed</u>	<u>Military Missile R & D Program</u>	<u>Chemical Weapons</u>
Egypt	SCUD	X	Confirmed
Iran	SCUD	X	Confirmed
Iraq	SCUD	X	Confirmed
Israel	Jericho	X	Suspected
Libya	SCUD	X	Confirmed
Saudi Arabia	CSS-2	---	Potential
South Yemen	SCUD	---	None
Syria	SCUD	Suspected	Confirmed

Figure 4. Proliferative Middle East/North African Countries:
Ballistic Missile/Chemical Weapons Capabilities ⁵

Although much speculation has been offered and even written concerning the chemical weapons and ballistic missile capabilities in the region, specifically Iraq's capability preceding the recent Gulf War, there is currently no proof or factual evidence available ⁶ that indicates that chemical weapons have been successfully mated to ballistic missiles by any country within the region. However, that's not to say there is no current risk or reason for concern. Quite the contrary, the prudent individual will view the proliferation of chemical weapons and the recent developments in ballistic missile technologies as real and growing. Even current ballistic missile arsenals in the region if adapted to carry chemical weapons would represent a significant military risk (an inaccurate ballistic missile with a chemical warhead provides better lethal coverage than a reasonably accurate missile with a conventional warhead).⁷ There is currently little interest by regional proliferative countries to participate in arms control and restrictions on technology flow into the region have been largely ineffective.

Therefore, when you combine the expected future growth (even if only a conservative estimate) in ballistic missile accuracy, missile range, and the number of countries seeking to acquire chemical weapons, the future potential of chemically-armed ballistic missiles represents a serious risk to regional security ⁸ and to NATO's Southern Region.

The near and mid-term future looks even less promising. As missile technologies improve and ranges of ballistic missiles increase the ability of countries to enter conflicts outside their immediate geographic area also grows. The most notable impact of this consequence is that a missile capability could quickly broaden the scope of any conflict or war (witness Iraq's missile attacks on Israel during the recent Gulf War); or could enhance the incentive to strike first, either as part of an offensive thrust or as a preemptive strike during a crisis -- an often quoted logic in the region is "use them or lose them." ⁹ Possession of chemical weapons and a possible future delivery means by countries who sponsor terrorism (four of the six countries on the 1 May 1991 US State Department list of countries who support terrorism are from the region: Iran, Iraq, Libya, and Syria -- others are Cuba and North Korea) is also a serious threat to regional stability, as well as, global security.

It is quite evident that the Southern Region, and thus NATO, faces a serious future risk as a result of the proliferation of chemical weapons and ballistic missiles technologies in the Middle East and North Africa. One might view the facts and complacently conclude that the concerns and

risks are too distant or unwarranted due to the technological advances that would be required to result in a "true" strategic threat to Southern Region countries. One might also view it as a regional problem that will not expand beyond Middle East and North African boundaries to directly threaten NATO. Hopefully, lessons learned from Iraq's military build-up and regional aggression that led to the recent Gulf War will present us with a slightly different perspective of the region, its instability, and the inherent risks.

So, the leading question becomes: How are Southern Region countries threatened by chemical weapons or in the future, chemically-armed ballistic missiles; and how do they get drawn onto a chemical battlefield not of their own making? An interesting question, and one not beyond reasonable speculation since arguments can be made to further several possible scenarios. Crisis or conflict could conceivably break out accidentally. Libya's launching of two SCUD missiles (in response to the April 1986 US attack on Tripoli) that exploded just off the island of Lampedusa is a developing ballistic missile capability that certainly adds a dimension of fear to Italian public perception of the security in the Mediterranean.¹⁰ The attack by an Iraqi fighter on the USS Stark in 1987 and the shooting down of the Iranian Airbus by the USS Vincennes in 1988 are further examples of such incidents that could easily have triggered crisis,¹¹ possible retaliatory strikes, and even inadvertent conflict where regional countries could have responded with chemical weapons and, in the future, chemically-armed ballistic missiles.

Ethnic or religious unrest such as the current Kurdish problem,¹² the continued spread of Islamic fundamentalism, or ethnic unrest in the Balkans or Soviet Union, especially the Caucasus region¹³ could all theoretically spark a crisis that would effect NATO's Southern Region. Ethnic and religious issues and problems know no national sovereignty or boundaries and could easily spill across borders drawing regional countries into unwanted crisis or onto battlefields not of their choosing.

When you look at the Southern Region it is evident that Turkey is at the critical junction. It is the country at the highest risk and the country most likely to be drawn into a crisis or conflict due to its proximity to the Middle East, the Balkans, and the Caucasus.¹⁴ As highlighted during the recent Gulf War, Iraq's chemical capability and threat of use directly against Israel also implied a potential attack or high risk of chemical weapons use against Turkey.¹⁵ Thus, NATO, as an Alliance, was faced with a real and direct chemical warfare threat. Iraq had ballistic missiles, as well as, aircraft with ranges capable of striking Turkey. While Iraq's Air Force was effectively neutralized early in the war, it was never proven during the war that Iraq did not have the capability to deliver chemically-armed ballistic missiles. Aircraft and artillery delivered chemical weapons also remained a possible risk and serious concern throughout the war.

While the proliferation of chemical weapons and ballistic missiles in the Middle East and North African region has long

been recognized, it has not been viewed as a serious risk to Southern Region security -- the recent focus and potential risks were seen coming from instabilities in the Balkans and the Caucasus.¹⁶ Thus, at the onset of the recent Gulf War Turkey's risk of Iraqi chemical strikes and its critical shortage of chemical defense equipment became issues of unsettling concern and urgency.¹⁷ It required a concerted effort and collective assistance from Alliance countries to protect Turkey¹⁸ and to rapidly improve its chemical defense capabilities in the face of this looming risk of chemical weapons use by Iraq. For Southern Region countries, this failure to maintain even the basic chemical warfare deterrent -- an adequate chemical defense posture -- incurs a bazaar risk.

Then why hasn't the Southern Region corrected its marginal chemical defense posture over the years? The "easy answer" is contained in the NATO Defense Planning system. It provides the framework within which national policies and planning are harmonized to meet the military needs of the Alliance in the most efficient manner.¹⁹ While the Alliance achieved significant improvements in its chemical defense posture during the 1980s as a result of commitments to NATO Long-Term Defense Planning, the availability of chemical protective equipment, adequacy of chemical defense training, and operational capabilities are greatly varied among the member nations. Some member countries of the Alliance (most apparent in the Southern Region countries) are often prevented from conducting chemical defense training due to defense

budgets which, while supporting wartime operational requirements, do not provide adequate quantities of protective equipment to support timely and realistic chemical defense training. This type of training is absolutely essential to the development of an effective chemical defense --the lack of which represents a major deficiency in the overall NATO force posture.²⁰ The facts are that there remain stark differences between NATO's Regions, as well as, between countries. While force proposals and force goals are generated and updated through the Annual Defense Review, the results remain "plans" and "paper", neither of which met the needs during the growing crisis of the recent Gulf War.

While chemical defense is a national responsibility, the reality is that NATO, as an Alliance, must move beyond this approach and enhance the capability of Southern Region forces to survive and operate in a chemical environment. The economic limitations that currently prevent Southern Region countries from achieving the required high readiness of chemical defense preparedness is clearly contradictory to the current perception of the risk from the proliferation of chemical weapons and ballistic missiles in the areas on the periphery of the Southern Region.²¹ The more unnerving concern once one acknowledges this fact is in not taking action (collective action, if that is what is required) to resolve the poor level of chemical defense preparedness in the Southern Region. As was apparent during the recent Gulf War, Turkey's geostrategic position as the southeastern anchor of NATO and its close proximity to the volatile Middle East

region placed it at risk; thus, as an Alliance, NATO was at risk.²²

The not-too-distant future may see many of the Middle East and North African region's ballistic missiles tipped with chemical verses conventional warheads.²³ The prospect is alarming but certainly not beyond our capability to take corrective action. Chemical weapons are less destructive and more easily defended against than nuclear weapons -- the risk to Southern Region security comes from not taking the required actions to equip, train, and prepare forces to survive and operate in a chemical environment. Are Southern Region forces at risk now or in the near to mid-term future? All indications would say, yes!

ENDNOTES

1. Omer Akdagli, LT CDR, The Future of the Alliance: Risks to NATO's Southern Flank, pp. 10 and 14.
2. David Rubenson and Anna Slomovic, The Impact of Missile Proliferation on US Power Projection Capabilities, p. V.
3. Henning Wegener, Ambassador, NATO and The Future of European Security, p. 10.
4. Thomas L. McNaugher, "Ballistic Missiles and Chemical Weapons: The Legacy of the Iran-Iraq War," International Security, Fall 1990, p. 24.
5. Giovanni A. Snidle, "United States Efforts in Curbing Chemical Weapons Proliferation," World Military Expenditures and Arms Transfers 1989, p. 22; "Ballistic Missile Proliferation in the Developing World," World Military Expenditures and Arms Transfers 1988, p. 18.
6. Israel claims Syria has developed special warheads for its SS-21 and SCUD missiles to launch nerve gas (see Rubenson and Slomovic, p. 21.)
7. Rubenson and Slomovic, p. 22 and 25.
8. Ibid.
9. Mark A. Heller, "Coping With Missile Proliferation in the Middle East," Orbis, Winter 1991, pp. 17-21.
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11. Janice Gross Stein, "The Challenge of the Persian Gulf Crisis," Peace & Security, Winter 1990/1991, p. 4.
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13. Serge Schmemmann, "Ethnic Clashes Flare in Caucasus," International Herald Tribune, 8 May 1991, p. 1.
14. Interview with Halil Istihkam, LTC and Kemal Ozdem, MAJ, Operations Division-Turkish General Staff, Ankara, 29 April 1991.
15. Wegener, p. 11.
16. Interview with Orhan Yoney, BG, Plans and Policy Division- Turkish General Staff, Ankara, 29 April 1991.

17. Ibid.
18. Wegener, p. 11.
19. North Atlantic Treaty Organization, Tri-MNC Staff Guide to NATO Defense Planning, p. 1.
20. Hugh Stringer, Deterring Chemical Warfare: US Policy Options for the 1990s, pp. 32-33.
21. Interview with LTC Istihkam and MAJ Ozdem.
22. Ibid.
23. McNaugher, p.33.

CHAPTER V

Conclusions

As Iraq was expelled from Kuwait and the recent Gulf War ended there was a great deal of discussion and future hope for a post-war order that would bring lasting peace and stability to the region. However, the reality is that the instability of the region remains and looms larger than ever. Syria is a stronger regional power as a result of its part in the allied coalition;¹ Iran gained much needed support from its Arab neighbors for staying clear of the Gulf War and now appears poised to fill any developing vacuum in the region;² Hussein and his Baath Socialist Party still hold power in Baghdad; Qadhafi continues to develop and flaunt his chemical weapons' capabilities;³ the Arab/Israeli proposed peace negotiations have not developed as rapidly as envisaged and currently are no more than talks about talks;⁴ and ethnic problems and the spread of Islamic fundamentalism continues unabated.

The risks posed by the further proliferation of chemical weapons and ballistic missile technologies in this volatile and unstable region are profound and a number of conclusions

can be drawn:

* The Conference on Disarmament (CD) meeting in Geneva could lead one to the perception that significant progress is being made toward a global ban of chemical weapons. While progress is being made one must realize that only three Middle East/North African countries (Algeria, Egypt, and Iran) participate in the CD ⁵ and as this paper describes, proliferation of chemical weapons in the region as a whole continues unabated . . . a treaty won't necessarily stop chemical weapons proliferation.

* Chemical weapons use, despite the Geneva Protocol and international norms and laws, is seen as acceptable and legitimate by a number of countries,⁶ specifically possessor and recent user countries in the Middle East and North Africa . . . there are no penalties for being a member of the club.

* The full extent of the risks from chemical weapons proliferation in the region is not known because production is relatively simple and inexpensive, possession is not easily detected, and potential capabilities as a result of the widespread petro-chemical, pesticide, and pharmaceutical industries, exist almost everywhere. Precursor chemicals and required equipment for chemical agent production have numerous legitimate industrial applications ⁷ and are, likewise, readily available and obtainable . . . the proliferation continues.

* The ease with which chemical agents can be obtained or produced make them ideal weapons for terrorists. The dramatic effect resulting from the use of chemical type weapons or agents in a crowded public facility or to defeat guarded national security or military installations would be devastating and guarantee worldwide attention.⁸ Countries within the region that support terrorism are Iraq, Iran, Syria, and Libya⁹ . . . a sobering thought, if nothing else.

* Trends in ballistic missile technologies reveal several disturbing factors. More countries are acquiring ballistic missiles, missile accuracies and ranges are steadily improving, and the number of regional countries (suspected of) seeking chemically-armed ballistic missiles represents a growing concern and major risk to regional security¹⁰ . . . an issue that certainly can not be ignored.

* While recent US statements appear to have devalued their view of the military utility of offensive chemical weapons in major conflict, thus resulting in a new policy approach in the chemical disarmament process,¹¹ the fact remains that numerous (regional) countries still retain the view that chemical weapons offer a significant military capability. Thus, the emphasis and importance of chemical defense equipment and protection must be retained and in the case of Southern Region countries significantly improved. Survivability of the fighting force requires immediate attention and expeditious resolution of chemical defense deficiencies . . . the risk is now, it is growing, and we are

not adequately prepared in the Southern Region to meet the challenge.

Thoughts for the Way Ahead

It is difficult to imagine what would stop, much less reverse, the proliferation of chemical weapons and ballistic missile technologies that have already taken place. The region abounds with unresolved conflicts and animosities, and future prospects are for increasingly unstable and volatile situations unless a structure for a durable peace can be built. The obvious solution for lasting peace and stability in the region is to resolve its conflicts through political settlements.¹² The top priority by the international community must be to find a solution to the Arab/Israeli conflict and to the Palestinian question.¹³

From there the direction should be toward a "security and cooperation-style conference" for Middle East and North African region countries, a CSCE (Conference on Security and Cooperation in Europe) type process for the region. It should be one with less emphasis, at least initially, on human rights and more on security, confidence-building, and economic assistance and cooperation.¹⁴ Recognizing the intense magnitude of this undertaking is obvious. The immediate approach should focus on arms control and confidence and security-building measures to slow the pace of weapons proliferation in the region. The strengthening of existing national and multinational export controls and non-proliferation mechanisms for precursor chemicals and missile technologies must be a primary focus to include stepped-up

licensing procedures, control lists, and enforcement procedures.¹⁵ Traditional arms control measures of limiting numbers and types of weapons need to be initiated and enforced to limit further proliferation of destabilizing weaponry. An international INF (Intermediate-Range Nuclear Forces) treaty that bans all ground launched ballistic missiles with a range of 500-5,500 km should be the initial arms control focus. The US and Soviets have already taken this step and would be in a position to lead negotiations with proliferative regional states to do likewise.¹⁶ Confidence and security-building measures will be more difficult to implement in the region because they require cooperation between adversaries, an unlikely occurrence where mistrust, hatred, ethnic, religious, and economic differences abound.¹⁷ However, this is a process that must start with a first step and could easily lead to meaningful negotiations for a reduction in forces and armament similar to the CFE (Conventional Forces in Europe) treaty. A reduction of arms by Arab nations could free up billions of dollars for regional reconstruction and result in a narrowing of the gap between regional "have's" and "have-not's".¹⁸

From NATO's perspective, this new challenge from chemical weapons and ballistic missiles looming on the periphery of the Southern Region must be addressed. Planning and corrective actions to "shore-up" Southern Region chemical defense preparedness in the face of this emerging and growing menace, even if some still view it as a hypothetical risk, must be initiated now. Chemical weapons, devastating against the unprotected, have a greatly reduced effectiveness against

forces with modern protective equipment,¹⁹ training, and doctrinal procedures. Chemical defense measures are and will remain, an essential part of any deterrent capability.²⁰ Therefore, the straight forward decision for NATO's Southern Region must be to achieve an immediate, high-pay-off benefit by strengthening chemical defense preparedness/readiness. Chemical defense programs within the Southern Region must be modernized and must compete for required funding at the same level of importance as high cost armament programs to guarantee viability. Where economic constraints limit modernization, cooperative programs between Alliance nations to share investments and risks need to be undertaken. Another approach to meet Southern Region countries chemical defense equipment shortages may be through the NATO Infrastructure process where NATO projects, including armament or defense equipment development and production, can be Infrastructure-funded provided all Alliance nations agree to such an action.²¹ Still another approach may be to develop a pool of chemical defense equipment in "Brigade-sets". The equipment would be NATO-funded and would serve as a force-multiplier capable of being deployed whenever and wherever directed by NATO in time of crisis or conflict. Having the equipment pre-packaged and stored under this approach would have eliminated the time delays experienced in supplying Turkey with critically needed chemical defense equipment during the recent Gulf War.²²

Finally, we must recognize that treaties, overpowering military forces, and possession of modern weapons will not

eliminate the risk from chemical weapons and their (continued) proliferation in the region. Likewise, no amount of moralizing will ensure that a terrorist organization or future aggressor won't see the prospect of a decisive advantage gained from chemical weapons and their potential use in crisis, conflict, or war.²³ The risks from chemical weapons will continue . . .

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4. "A Chance for the Mideast," International Herald Tribune, 26 April 1991, p.4.
5. David Rubenson and Anna Slomovic, The Impact of Missile Proliferation on US Power Projection Capabilities, p. 29; Institute for Defense & Disarmament Studies, The Arms Control Reporter, 1991, p. 805.A.1.
6. Institute For Defense Analysis, Summary Report: Chemical Warfare in the Third World, p. ES-1.
7. Ibid., p. 2-6.
8. Ibid. p. 2-7; Hugh Stringer, Detering Chemical Warfare: US Policy Options for the 1990s, pp. 38-39.
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19. Christine M. Helms, Matthew Meselson, and Brad Roberts, Chemical Weapons and Security in the Middle East, p. 16.
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